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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/567,442	02/07/2006	Kazuo Oki	285824US0PCT	5051

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OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C.  
1940 DUKE STREET  
ALEXANDRIA, VA 22314

EXAMINER
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WIESE, NOAH S

ART UNIT	PAPER NUMBER
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1793

NOTIFICATION DATE	DELIVERY MODE
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01/09/2009

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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<b>Office Action Summary</b>	<b>Application No.</b> 10/567,442	<b>Applicant(s)</b> OKI, KAZUO
	<b>Examiner</b> NOAH S. WIESE	<b>Art Unit</b> 1793

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 24 September 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 4-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 4-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>05/05/2006; 11/12/2007</u> .                                  | 6) <input type="checkbox"/> Other: _____                          |

***Status of Application***

1. Acknowledgement is made of amendments filed 09/24/2008. Upon entering the amendments, the claims 1-3 are canceled, claims 4-6 are amended, and claims 7-23 are added.

The claims 4-23 are pending and presented for the examination.

***Rejections Withdrawn***

2. Claims 4-6 have been amended to overcome the 101 and 112 rejections set forth in the previous office action. Therefore, the rejections to the claims have been withdrawn.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

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5. Claims 4-7, 9-17, 19-21, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakaguchi et al (US 6468500) in view of Hagiwara et al (US 4959268).

Regarding **claim 4**, Sakaguchi et al teaches an aluminosilicate particulate material having a composition represented by  $aM_2O \cdot bAl_2O_3 \cdot cSiO_2 \cdot dR_m A_n \cdot yH_2O$ , wherein M is at least one of Na and K; R is one or more elements selected from the group consisting of Na, K, Ca and Mg; A is one or more members selected from the group consisting of CO.sub.3, SO.sub.4, NO.sub.3, OH and Cl; a is from 1 to 6; b is from 2 to 8; c is from 2 to 12; d is from 0 to 4; m is from 1 to 2; n is from 1 to 3; and y is from 0 to 32. Thus, the aluminosilicate taught by Sakaguchi is equivalent to that of instant claims in each component except that the instant claims teach that an additional oxide of the variable element M(1) is added to the aluminosilicate. Sakaguchi et al does not teach that an oxide of Ag, Cu, Zn, or Fe is included in the aluminosilicate. However, it would have been obvious to one of ordinary skill in the art to modify the Sakaguchi composition in view of Hagiwara et al in order to add an oxide of one of these elements and use the aluminosilicate in a deodorization process because Hagiwara teaches that adding one of these oxides to an aluminosilicate by ion exchange gives the advantageous result of increasing antibacterial ability.

Hagiwara teaches a composition and method of using same in deodorizing that comprises an aluminosilicate material that is treated with ion exchange in order to add antimicrobial ions selected from a group of Ag, Cu, Zn, Hg, Sn, Pb, Bi, Cd, and Cr (see claim 2 and column 13, lines 26-29). Hagiwara teaches that the aluminosilicate has a

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formula before ion exchange given by  $xM_2O \cdot Al_2O_3 \cdot ySiO_2$  (see claim 2), and specifically teaches a formula  $1.1Na_2O \cdot Al_2O_3 \cdot 2.9SiO_2$  (see example 1). Thus, Hagiwara teaches that the aluminosilicate for ion exchange is of a similar type to that of Sakaguchi.

Hagiwara teaches examples wherein Ag, Cu, and Zn are added to the aluminosilicate (see examples 1 and 5). In the aluminosilicates, the above ions would be present as oxides and would necessarily have stoichiometry that meets the x and y limitations of instant claim 4. Thus, the aluminosilicate taught by Sakaguchi in view of Hagiwara meets all of the compositional limitations of claim 4. Sakaguchi is silent as to the surface area of the aluminosilicate particle. However, Hagiwara teaches that the specific surface area of the aluminosilicate particles to be treated by ion exchange is  $5 \text{ m}^2/\text{g}$  or greater (see column 3, lines 33-40). This would indicate to one of ordinary skill that an appropriate surface area for aluminosilicates created by Sakaguchi in view of Hagiwara would be greater than  $5 \text{ m}^2/\text{g}$ . Per MPEP 2144.05, in the case where the claimed ranges “overlap or lie inside ranges disclosed by the prior art” a prima facie case of obviousness exists.

One of ordinary skill in the art would have been motivated to employ this ion exchange process in order to use the Sakaguchi aluminosilicate in the deodorization method taught by Hagiwara because doing so would create a new use for the Sakaguchi aluminosilicate. One would have expected reasonable success in the modification because Hagiwara teaches that the ion exchange process can be carried out on aluminosilicate compositions that are similar to those taught by Sakaguchi. Therefore, claim 4 is obvious and not patentably distinct over the prior art of record.

Regarding **claim 5**, Hagiwara teaches that the aluminosilicate is produced by first forming an anhydrous aluminosilicate (see production example 1 and example 1) and then subjecting the composition to an acid solution and performing ion exchange to introduce the antibacterial ions (see columns 7-8, lines 66-28). These are equivalent steps to subjecting an anhydrous aluminosilicate to an acid treatment and ion-exchange. While the acid amount is not taught by Hagiwara, it would necessarily be greater than 0 meq/100g in order to be acidic.

Because Hagiwara teaches that treating an anhydrous aluminosilicate with an acid treatment and ion exchange is an effective method for introducing the desired antibacterial ions, one of ordinary skill would have been motivated to use the equivalent method when modifying Sakaguchi in view of Hagiwara. The anhydrous equivalent of the Sakaguchi aluminosilicate would meet the limitations of the composition given in claims 2 and 5 because this formula is obtained by removing the H<sub>2</sub>O from the Sakaguchi formula. Thus, all of the method limitations of claim 5 are met, and the claim is obvious and not patentably distinct over the prior art of record.

Regarding **claims 6-7**, because Sakaguchi in view of Hagiwara teaches an aluminosilicate particle meeting all of the limitations of claims 4-5, it necessarily follows that a 1 wt% aqueous dispersion of this particle would have a pH of greater than 7.

Regarding **claim 9**, Hagiwara et al teaches that the element to be exchanged into the aluminosilicate can be Ag or Zn and Sakaguchi et al teaches that the M element (equivalent to the M(2) element of instant claims) can be Na (see Abstracts). Sakaguchi further teaches that A (equivalent to Q of instant claims) can be CO<sub>3</sub> or NO<sub>3</sub>, and the

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ranges for the equivalent coefficients to the “t”, “u”, and “v” coefficients of instant claims overlap those of claim 9. As discussed above, performing the Hagiwara ion exchange process on the Sakaguchi aluminosilicate would lead to a material having an “s” coefficient of between 0 and 2. Therefore, Sakaguchi in view of Hagiwara teaches a method of deodorizing with a material meeting all of the limitations of claim 9.

Regarding **claim 10**, as discussed above, Sakaguchi does not specify the surface area of the particles, but it would have been obvious to use the surface area taught by Hagiwara. Hagiwara teaches several examples wherein the surface area is between 30 and 65 m<sup>2</sup>/g (see production example 5 and example 8).

Regarding **claims 11-12**, because Sakaguchi in view of Hagiwara teaches an aluminosilicate particle meeting all of the limitations of claims 6-7, it necessarily follows that a 1 wt% aqueous dispersion of this particle would have a ph of greater than 9.

Regarding **claim 13**, because Sakaguchi in view of Hagiwara teaches an aluminosilicate particle meeting all of the limitations of claim 4, it necessarily follows that the particles would have this compositionally-dependent color property.

Regarding **claim 14**, Sakaguchi teaches that the aluminosilicate particles have a size of from 0.1 to 500 µm, preferably from 1 to 100 µm (see column 3, lines 24-26).

Regarding **claim 15**, Sakaguchi teaches that the particles can be spherical (see column 2, lines 60-62).

Regarding **claim 16**, Sakaguchi teaches that the aluminosilicate particles can have cancrinite structure (see column 3, lines 13-23).

Regarding **claim 17**, Sakaguchi teaches that the aluminosilicate particles are crystalline (see Figure 5).

Regarding **claim 19**, Sakaguchi teaches that the aluminosilicate is used as a powder (see column 4, lines 46-48).

Regarding **claim 20**, Sakaguchi does not specify that the aluminosilicate powder is used with a binder, but Hagiwara teaches that the aluminosilicate powder is combined with a polymer that would act as a binder when the powder is used for deodorization and other methods (see claim 1). Thus, one of ordinary skill would have been motivated to combine the Sakaguchi in view of Hagiwara deodorant powder with a polymeric binder when using the powder in deodorization as taught by Hagiwara. Therefore, claim 20 is obvious and not patentably distinct over the prior art of record.

Regarding **claims 21 and 23**, Hagiwara teaches that the aluminosilicate powder (the deodorant) is present in an amount of 0.005 to 50 wt% based on the total composition (see claim 5). Per MPEP 2144.05, in the case where the claimed ranges “overlap or lie inside ranges disclosed by the prior art” a prima facie case of obviousness exists.

6. Claims 8 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakaguchi et al (US 6468500) in view of Hagiwara et al (US 4959268) and in further view of Peterson et al (US 5861146).

Regarding **claims 8 and 22**, while Hagiwara et al teaches a method of using aluminosilicate particles in deodorization processes, it does not specify that the odor treated is a sulfur-containing odor. However, it would have been obvious to one of



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ordinary skill in the art to modify Sakaguchi and Hagiwara in further view of Peterson et al in order to treat these types of odors because Peterson teaches that deodorant compositions are commonly used to treat sulfur-containing odors. Peterson teaches a method and composition for reducing body odor, and specifies that body odors are commonly sulfur-containing (see column 1, lines 4-15). This teaching would indicate that deodorant compositions and methods such as those taught by Hagiwara could advantageously be used to treat body odors, that is, sulfur-containing odors. Therefore, claim 8 is obvious and not patentably distinct over the prior art of record.

7. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sakaguchi et al (US 6468500) in view of Hagiwara et al (US 4959268) and in further view of Yang (US 5883035).

Regarding **claim 18**, the claim differs from Sakaguchi et al because Sakaguchi does not teach that the raw aluminosilicate is acid treated. Hagiwara teaches that the raw aluminosilicate is treated with an acidic solution, but does not specify the amount of acid used in meq/100g. However, it would have been obvious to modify Sakaguchi in further view of Yang in order to apply an acid treatment at this level because Yang teaches that acid treatments are advantageous in increasing the surface area of aluminosilicates.

Yang teaches a method for creating aluminosilicate materials with higher surface areas by acid treatment (see Abstract). Yang teaches that acid treatments in amounts meeting the range of claim 18 can be used. For instance, in Yang example 7 an amount of acid equivalent to 0.4 meq/100g is used. The Yang teaching show that the amount of

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acid used in treating aluminosilicates can be varied and that using amounts that fall within applicant's claimed range were known to be advantageous in the art. Therefore, one of ordinary skill in the art would have been motivated to use these levels of acid treatment when treating the aluminosilicates taught by Sakaguchi in view of Hagiwara. One would have expected reasonable success in the treatment because both Hagiwara and Yang teach acidic treatment of aluminosilicates. Therefore, claim 18 is not patentably distinct over the prior art of record.

### ***Applicant's Arguments***

8. Applicant's arguments filed 09/24/2008 have been fully considered but are not persuasive.

Applicant's amendments overcome the previously issued 112 and 101 rejections of claims 4-6. The amendments add active method steps to the claims that previously lacked these. Thus, the claims are now examinable on merits. Applicant's arguments regarding the indefiniteness of the pre-amended claims are not persuasive. The term "using an aluminosilicate particle for deodorization" is indeed indefinite because there are no active steps in the language, and thus there is no indication of *how* the particle is used.

Applicant's amended claims and the newly added claims are not distinct over the prior art of record because new grounds of rejection based on the prior art and necessitated by amendment are applied to all pending claims.

***Conclusion***

9. All the pending claims are rejected.
10. The previously presented claims are rejection under new grounds necessitated by amendment. Therefore, **THIS ACTION IS MADE FINAL.**
11. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.
12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to NOAH S. WIESE whose telephone number is (571)270-3596. The examiner can normally be reached on Monday-Friday, 7:30am-5:00pm EST.  
  
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo can be reached on 571-272-1233. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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/J.A. LORENZO/

Supervisory Patent Examiner, Art Unit 1793

Noah Wiese

December 30<sup>th</sup>, 2008

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